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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/753,851

01/07/2004

Masakazu Sugimoto

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6018

26646

7590

07/19/2007

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EXAMINER

CHAPMAN, JEANETTE E

ART UNIT

PAPER NUMBER

3635

MAIL DATE

DELIVERY MODE

07/19/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/753,851	SUGIMOTO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Chapman E. Jeanette	3635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 12-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**35 U.S.C. 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugimoto et al. published PCT Application No. WO 01/16438 (Sugimoto) in view of either Prokopenko et al., USP No. 6,467,321, (Prokopenko) or the Lixing et al. published article "Investigation on Improving Fatigue Properties of Welded Joints by Ultrasonic Peening Method" (Lixing). Note that the Sugimoto document is the WIPO publication of the PCT application which forms the basis for USP 6,857,808. Sugimoto et al. '808 is being used as an English translation of the WIPO document. The invention is directed to the reinforcement of "weld toes" located at the free end portions of ribs that are welded to the base of a steel pipe pole to form a T-joint. A "weld toe" is that portion of a weld which extends around the free end portion of a rib. See Figs. 1-3. The problems being addressed are (1) that pole vibrations caused by the wind subject the pole to large stress concentrations near the weld toes thus causing the strength of the weld toes to deteriorate and (2) that the welding heat causes residual tensile stress and material degradation which also affects the strength of the entire weld. The reinforcement is carried out by an ultrasonic peening process.. See pages 1 and 2 of the written description.

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Sugimoto recognizes both of these problems and addresses them by providing ribs that are bent in the form of a U or a V. See the discussion in columns 1 and 2 of the Sugimoto '808 patent. However, Sugimoto does not disclose peening or any other process for improving the strength of the weld, per se.

Prokopenko discloses a device used for metal peening and states that peening provides for strengthening and stress relaxation of metals. See col. 1, lines 6-9. He further states that ultrasonic peening is useful in treating a T-shaped welded joint in the zone of the weld toe. See column 7, lines 13-20.

Lixing recognizes that fatigue cracks normally initiate in the weld toe of a welded joint and that ultrasonic peening of the weld toe significantly improves its fatigue life. See the Lixing et al. abstract.

None of the prior art discloses that the peened portion should extend at least 10 mm downward from the upper end portion of a rib or that the peened portion should extend at any particular central angle on both sides of a center line, as claimed. However, the applicant does not state that either limitation is critical or provides an unexpected result. Furthermore, he does not so much as point out an advantage of the claimed distance and angles over other distances and angles. He merely states that the claimed length and angles are "preferable." See page 6, lines 28-

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31, and; page 8, line 34-page 9, line 2. In addition, he states that it is also acceptable to apply peening treatment to other welded portions. See page 9, lines 32-36. On page 6 of the amendment filed on June 6, 2006, applicant argued that these limitations render the claims patentable, but did not explain why. He merely argued that the prior art does not "disclose or suggest the very specific locations for the peening processed portions."

In order to establish unexpected results over a claimed range, an applicant should compare asufficient number of tests both inside and outside the claimed range to show the criticality of the claimed range. See MPEP 716.02(d), section II. Test results which demonstrate criticality may be presented in an affidavit submitted as evidence during prosecution. See MPEP 716.01(a) and 716.02(e). Until such time as the applicant demonstrates criticality, it is reasonable for the PTO to take the position that the claimed length and angles are merely the result of optimization of ranges, as discussed in MPEP 2144.05, Section II.

Accordingly, it is submitted that it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the weld toes of the ribs disclosed by Sugimoto (e.g. in Figure 2) by providing them with peened portions as taught by either Prokopenko or Lixing. The motivation for these combinations comes from each of

the references. All three documents recognize that welds, and weld toes in particular, are weak. Furthermore, both Prokopenko and Lixing teach that peening increases the strength of a weld and is particularly useful in strengthening weld toes. The particular claimed distance and angles would have been obvious matters of routine experimentation for one of ordinary skill in the art because one of ordinary skill would be fully capable, through routine experimentation, of arriving at the optimum length and angular extent of a peening portion. Since peening is known in the prior art to strengthen welds and weld toes are known to be weak, and since applicant admits that it is acceptable to peen the entire rib weld (page 9, last paragraph of written description), the only consideration in peening less than the entire weld would be a financial one. In other words, in order to hold down the cost of peening, one skilled in the art would peen only so much of the weld as is required to provide the desired strength. Clearly such a determination could easily be made by routine experimentation.

Claims 13, 14, and 15-16 are also unpatentable over the above combination of references Sugimoto and Prokopenko are of record.

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Claims 12-16 should have been rejected under 35 U.S.C. 112(1) as lacking a written description in the application as originally filed. In particular, there is no support in the original disclosure for requiring the peened portions of the shaped ribs (i.e. the U-shaped and V-shaped ribs) to extend at least 10 mm downward from the upper end portions of the ribs and to extend at a 30-60 degree angle on both sides of

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the center lines of the ribs. In support, note the discussion on page 6 of the written description which discusses limiting the peened portions 20 (Fig. 2) to a particular distance downward from the upper end portions of tabular ribs 12 only. Also, note the discussion beginning at the bottom of page 8 and continuing through line 8 on page 9 which discusses limiting the peened portion to an area defined by an angle on both sides of the center lines of U-shaped and V-shaped ribs 13 and 14 only. There is no discussion of limiting any peened portion to both a distance downward from the upper edge of a rib and to a region defined by an angle.

***Applicants arguments filed are not persuasive***

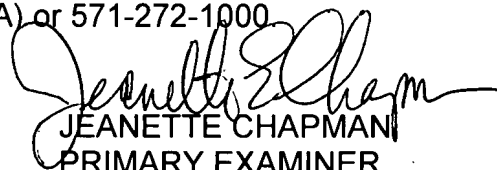
On page 6 of that amendment the applicant argues that Prokopenko only discloses that ultrasonic peening of metals is known in the art. Applicant further argues, "US '808 discloses numerous embodiments of steel structures. PK makes no disclosure or suggestion of which locations in these steel structures one skilled in the art should apply peening by ultrasonic vibrations to achieve improved results." These statements are incorrect. Prokopenko clearly discloses the use of peening to strengthen the weld toe of a T-shaped joint, thus clearly suggesting the use of peening to strengthen the weld toes of the joints disclosed by Sugimoto (US '808). See column 7, lines 14-20 of Prokopenko.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chapman E. Jeanette whose telephone number is 571-272-6841. The examiner can normally be reached on Mon.-thursday, 8:30-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CHILCOT RICHARD can be reached on 571-272-6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
JEANETTE CHAPMAN  
PRIMARY EXAMINER  
ART UNIT 3635

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